Year in Review 07-08

We continue moving forward as an innovator in the world of science, technology, and engineering. Our highlighted achievements focus on safety, security, environmental stewardship, nuclear deterrence, threat reduction, operations, communications, and community involvement.

Complex transformation, PEIS

Looking to the future, NNSA announced just before the holidays its preferred alternative for transforming the nuclear weapons complex. In that announcement, NNSA first and foremost confirmed that Los Alamos is a national security science laboratory—one where we use our interdisciplinary excellence in experimental, theoretical, modeling and simulation, and engineering science, especially in materials, to provide innovative and responsive solutions to the broad spectrum of national security challenges. In particular, NNSA is assigning three centers of excellence to LANL:

nuclear weapons design and engineering, where we provide the fundamental science-based understanding of nuclear weapon physics and engineering performance, safety and security;

plutonium research, development, and manufacturing, where we expand and use our excellence in actinide science and will have the capability to manufacture between 50 and 80 pits per year; and

supercomputing, where we will maintain for NNSA the world's best simulation capabilities.

Through this process, NNSA will transform the complex into a smaller and more responsive enterprise consistent with the security challenges of the 21st century. NNSA predicts this will result in a 20 percent reduction in our core mission at LANL over time. We expect NNSA to issue the draft supplemental Programmatic Environmental Impact Statement (PEIS) this month, and to hold public hearings, including several in New Mexico, where we and other members of the community can all express our views.

Additional opportunities for the future

As we solidify our essential national roles in our core mission area, there are other exciting opportunities to bring our interdisciplinary excellence to bear for innovative solutions to the< grand challenges facing our nation. There have been numerous examples this

year. One of particular note is the Roadrunner supercomputer where we and IBM turned skeptics into supporters of this new technology approach to supercomputing. We also see other opportunities. We will continue to grow our role as a provider of choice for many of the nation's intelligence community science-based challenges and we are growing our nonproliferation programs in areas such as: building instrumentation for several new satellites; developing safeguard technologies for nuclear materials; and developing other sensor, information science, and materials technologies to mitigate the spread of weapons of mass destruction. LANL will also be a key player in providing solutions to the tremendous challenge of energy security, especially through energy storage solutions, developing and evaluating new materials, and assessing economic and environmental impacts of decisions about energy choices. All our programs are built on our scientific infrastructure, where our focus is on attracting and retaining top scientific talent and providing them the tools to succeed. MaRIE is our proposed signature experimental facility to understand matter-radiation interactions in extremes and translate that into real program solutions. We are refining this facility concept through internal workshops and in concert with DOE and the external science community as well as our external advisory committee. MaRIE was identified in the NNSA PEIS as a magnet science facility. We are engaging NNSA for final approval to proceed with the new science park complex with unclassified and classified office and light lab space to move many hundreds of employees out of substandard space.
Ongoing
This has been a challenging year but also one marked by many successes—thanks to the hard work and creativity of our employees. We have an exciting future in front of us, evolving to reflect the needs of the country. By working together, we will: become more effective and efficient operationally; deliver strong performance in programmatic areas and grow where we have the special ability to make a difference; and innovate across our scientific spectrum to meet today's and tomorrow's challenges.

Employee involvement and input feed continuous safety and security improvement at Los Alamos National Laboratory. Labwide safety and security processes continue to be improved and initiatives and programs implemented, with positive results.

The Laboratory greatly improved its security posture by fully implementing information security policy and is now working to meet all requirements of the DOE security compliance order.

Taking care of the environment is paramount at Los Alamos. The complexity and size of LANL operations make environmental compliance a continuing challenge. Legacy contamination exists at many locations and is being addressed by remediation efforts. This year, LANL garnered several top awards from NNSA for its pollution prevention efforts, affirming the importance and benefits, both environmental and fiscal, of integrating pollution prevention into the Lab's operations through environmental management systems. Such activities across the Laboratory have saved millions of dollars in operational costs while improving worker safety.

At Los Alamos, we are committed to safe, secure, and reliable weapons systems. This year, Los Alamos achievements in this area include the production, delivery, and certification of the first plutonium pits for acceptance into the nation's nuclear weapons stockpile in almost 20 years and the certification of the Laboratory's Dual Axis Radiographic Hydrodynamic Test facility.

The Laboratory's mission is to provide the scientific and technological know-how to meet any national security challenge. In December 2007, under its plan for "complex transformation," DOE announced that the Lab is the "preferred alternative" for plutonium, nuclear weapon design and engineering, and supercomputing programs. Seven public meetings were held to allow New Mexico residents to comment on the plan.

The Laboratory is a research leader in a vast array of scientific and technical areas in national security. Homeland security has become a special focus of Laboratory research and development. A Lab-developed airport-screening device that detects and identifies liquids and gels is poised to enter real-world testing, while the Lab's aerial-borne chemical identification system responded to disasters and emergencies throughout the country. Meanwhile, Lab instruments and power supplies continue to play key roles in ongoing and future space missions.

Los Alamos maintains a science capability that supports present and emerging missions and that

anticipates and delivers innovations to protect the nation. Multidisciplinary teams tackle extraordinarily complex problems, including ensuring the safety and reliability of the nuclear deterrent, understanding the energy-climate nexus, and protecting against weapons of mass destruction. The Lab conducts science that matters to the nation.

In its continuing quest to maximize effectiveness, flexibility, and efficiency, the Laboratory successfully brought DARHT into fully operational status; issued a request for proposal for a major new science complex; completed upgrades to the Waste Characterization, Reduction, and Repackaging facility; continued to significantly reduce its footprint; and opened a new high-energy laser facility.

The Laboratory has been working diligently to improve its performance by implementing systems, tools, and processes that drive mission and operational excellence.

Ensuring that taxpayers' money is spent wisely is serious business at Los Alamos. The Laboratory continues to deliver improved business tools, systems, and processes that help meet the needs of our employees, reduce the cost of doing business, and improve its mission performance.

Los Alamos strives to communicate effectively with employees, customers, community, stakeholders, and the public—every time it communicates in any way, it sends a message about its values, character, goals. The Lab's communication efforts are varied and far reaching and include numerous outreach and investment efforts with its neighbors in Northern New Mexico and elsewhere, as well as development of quality communication products that tell the Laboratory's story. World-class science requires world-class communication, at every level.

The Laboratory's workforce is key to meeting its mission. Although it has been a challenging year that involved workforce-restructuring efforts, it also has been one marked by many successes, thanks to a hard-working, creative workforce.
Ensuring that its highly skilled, qualified staff remains

motivated and able to continually meet the needs of the country, the Laboratory focuses efforts on enhancing the workplace environment, implementing efficient processes to make it easier to get work done. This effort involves working together and recognizing individual and team successes.